

REMARKS

Claims 1, 3-5 and 7-32 are pending in this application. By the Amendment, claims 1, 5 and 9 are amended. Claims 31 and 32 are added. These new claims introduce no new matter as they include features which were separately enumerated in the claims as previously filed. Reconsideration based on the above amendments and the following remarks is respectfully requested.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed below; (b) do not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; and (c) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in further clarification and response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiners Cleary and Rinehart in the multiple telephone conferences on May 11 and 12, and June 3 and 7, 2004. Applicants appreciate the opportunity given to Applicants' representative to clear up the Examiners' concerns regarding compliance of this application with Rule 83(a) during the May discussions. A detailed review of the Specification, Figures and each of the independent claims was conducted with the Examiners. Applicants' representative pointed to exemplary depictions in the drawings of "every feature of the invention specified in the claims" as is required by 37 C.F.R. §1.83(a). Each of the independent claims 1, 5 and 9 was discussed with reference to applicable Figures. No matters other than the Rule 83(a) concerns were discussed during the May 11 and 12 telephone conferences.

Applicants further appreciate the opportunity, in the June 3 and 7 telephone conferences, to obtain clarification of the Examiners' concerns which led to issuance of the May 17 Final

Rejection, and the opportunity to discuss amendments to the language of independent claims 1, 5 and 9 to distinguish over the applied art. Applicants' separate record of the substance of the interview is incorporated into the following remarks. Specifically, claims 1, 5 and 9 are amended to comply with the Examiners' helpful suggestions made during the interview.

The Office Action, in paragraph 36, states that claims 23, 24 and 28-30 are allowed. Further, the Office Action, in paragraph 31, states that claims 11-13 contain allowable subject matter. Applicants appreciate this indication of allowability but submit that independent claim 9, from which claims 11-13 depend, is allowable for the reasons discussed below. Further, Applicants respectfully submit that claims 31 and 32 are allowable in view of the above as these claims recite the features respectively of claims 23 and 24 in independent form as these claims existed before the current amendments to claims 1 and 9.

The Office Action, in paragraph 3, rejects claims 1, 9, 14, 16, 17, 19, 20, 22 and 25-27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,363,428 to Chou et al. (hereinafter "Chou") in view of U.S. Patent No. 6,510,156 to Brock et al. (hereinafter "Brock"). This rejection is respectfully traversed.

Chou teaches an interface circuit for sending and receiving communications via a 1394 link (Fig. 2 at col. 6, lines 49-51) that handles data packets which include a data portion in addition to protocol header information (col. 3, lines 1-2). Chou teaches details regarding handling of such packets to include storing the data portion in successive memory locations and storing packet headers "in successive locations separately from the data portions" (col. 3, lines 49-52). Further, Chou teaches "a method for receiving packetized data and separate protocol information from the content data in the packetized data" (col. 3, lines 64-66). Therefore, the data areas of the packet storage memory are not divided into first and second data areas. This data storage scheme necessitates additional processing of the data which precludes application data from being read out consecutively from the data areas. Thus, overhead cannot

be reduced significantly, and the actual transfer speed of the data transfer control device cannot be increased significantly.

Independent claims 1 and 9 recite, among other features, a packet division circuit which writes control information of the packet to a control information area of the packet storage memory, writes the first data of the packet for a first layer to a first data area of the packet storage memory, and writes second data of the packet for a second layer that is a layer above the first layer to a second data area of the packet storage memory, wherein the first data is command data used by the serial bus protocol 2 of the first layer and the second data is stream data used by an application layer, and the second data is read sequentially as an uninterrupted stream from the second data area and the read second data is transferred to an application layer device. In other words, the subject matter of these claims is directed to data areas that are divided into discrete first data areas and second data areas with the first data and the second data respectively written to these separate areas. In this manner, the first (command) data may be sequentially read out from the first data area, and the second data (for example, stream data used by an application layer) may be read sequentially as an uninterrupted stream out from the second data area to be transferred to an application layer device. As a result, processing overhead may be reduced, and the actual transfer speed of the data transfer control device may be increased, as compared to the applied prior art.

These distinctions were highlighted by Applicants' representative during a February 10, 2004 personal interview with Examiners Cleary and Rinehart. Agreement was reached during that interview that by specifying the type and functionality of the first and second data in claims 1 and 9, these claims would distinguish over the applied art. Applicants' representative, attempting to understand how the Examiners could now assert in paragraph 27 of the Office Action that "the amendments to the claims have not further specified the type and functionality of the first and second data to a degree which distinguishes it over the prior art" contacted the

Examiner. On June 3, Examiner Cleary and Applicants' representative discussed other amendments to the claim language in order to distinguish over the Chou reference as outlined above and the Brock reference as discussed below.

The Office Action, in paragraphs 4 and 5, recognizes that "Chou does not teach that the packet division circuit writes control information of the packet to a control information area of the packet storage memory." Rather, the Office Action relies on Brock for this feature.

Applicants respectfully submit that Brock discloses a two-level packet division and data storage scheme, rather than the three-level packet division and data storage scheme which is the subject matter of the enumerated claims. It is unclear from Brock whether the "header" information which is separately stored from the data under the separation and storage scheme disclosed in that patent can be likened to the control information or the command data used by the serial bus protocol 2 of the first layer as is recited, among other features, in, for example, independent claim 1.

Applicants also respectfully submit that it is not inherent that simply because the content data is audio/visual data, that the data is read sequentially from the second data area. With reference to Fig. 9 of this application, Applicants respectfully submit that it is not necessary in the normal and usual operation of conventional data transfer control devices that the content data be read sequentially from a discrete second data area. In fact, many conventional systems do not even separate the data into a second data area of a packet storage memory. As such, with reference to MPEP §2112, such a feature cannot be deemed inherent in a device or method. Applicants, however, have amended claims 1 and 9 to clearly distinguish over the applied art by specifying that the second data is read sequentially as an uninterrupted stream from the second data area and the read second data is transferred to an application layer device.

For at least these reasons, Applicants respectfully submit that the combination of features recited in independent claims 1 and 9 would not have been obvious in view of the combination of the applied references.

Dependent claims 14, 16, 17, 19, 20, 22 and 25-27, though reciting separately patentable subject matter, include all of the features of independent claims 1 and 9 from which they respectively depend. As such, the subject matter of these claims likewise would not have been obvious in view of the combination of the applied references.

Accordingly, reconsideration and withdrawal of the rejection of claims 1, 9, 14, 16, 17, 19, 20, 22 and 25-27 as being unpatentable over Chou in view of Brock are respectfully requested.

The Office Action, in paragraph 15, rejects claim 3 under 35 U.S.C. §103(a) as being unpatentable over Chou and Brock as applied to claim 1 above, and further in view of English Language Abstract of Japanese Patent Application Pub. No. 06-069913 to Nakamura et al. (hereinafter "Nakamura"). This rejection is respectfully traversed.

Applicants respectfully submit that Nakamura does not overcome the shortfalls in the application of Chou and Brock as applied to independent claim 1 from which claim 3 depends. Accordingly, reconsideration and withdrawal of the rejection to claim 3 as being unpatentable over the combination of the applied references are respectfully requested.

The Office Action, in paragraph 17, rejects claims 4, 5, 7, 8, 15, 18 and 21 under 35 U.S.C. §103(a) as being unpatentable over Chou and Brock as applied to claim 1 above, and further in view of U.S. Patents Nos. 6,115,770 to Gehman, 6,272,114 to Kobayashi, and 6,351,783 to Garney et al. (hereinafter "Garney"). This rejection is respectfully traversed.

Applicants respectfully submit that none of the applied references, Gehman, Kobayashi or Garney, overcomes the shortfalls in the application of Chou and Brock to independent claim 1

from which claim 4 depends. As such, Applicants respectfully submit that claim 4 would not have been rendered obvious over the combination of the applied references.

Independent claim 5 is patentably distinct as discussed below. Gehman teaches a method for receiving a request for a priority access to a target storage location (col. 3, lines 20-22), wherein the data in the individual data packets comprises destination and source notes, a type of request, a destination address, and includes a transaction label (col. 5, lines 32-36). Kobayashi teaches that a transaction code field or transaction label in a data packet can provide information regarding a process to be executed (col. 5, lines 40-41). Garney teaches a method for employing transaction codes in data packets to set bounds and conditions under which isochronous transactions may be transferred across an asynchronous bus (col. 2, lines 39-41).

Claim 5 recites, among other features, a circuit which performs the processing indicated by the indication information comprised within the transaction identification information of the response packet, wherein control information and data of the response packet are automatically separated and written into at least two of separate hardware, firmware, stream data and command data areas as specified by the indication information within the transaction identification information of the response packet, when the response packet from the responding node is received.

As noted in paragraph 19 of the Office Action, Chou does not teach a circuit that makes transaction identification information within a request packet include indication information that indicates processing to be performed after reception of a response packet from a responding node. The Office Action relies broadly on Gehman, Kobayashi and/or Garney as suggesting such a feature. Applicants respectfully submit that nothing in the combination of Brock, Gehman, Kobayashi and Garney overcomes this shortfall of Chou with respect to claim 5. Specifically, none of Brock, Gehman, Kobayashi or Garney deal with writing data to separate data areas within the packet storage memory, and more specifically the feature wherein control

information and data of the response packet are automatically separated and written into at least two of separate hardware, firmware, stream data and command data areas as specified by the indication information within the transaction identification information of the response packet.

Applicants' representative addressed these arguments with Examiners Cleary and Rinehart in the February 10 personal interview. The Examiners agreed that "clarifying identification information used to determine storage areas in claim 5 would distinguish over the applied art." All of the art currently applied against claim 5 was before the Examiners at that time, with the exception of the patent to Garney, which does not add any feature wherein separate data contained in a single packet is stored in separate data areas within the packet storage memory. Applicants' representative discussed the further amended claim language included in this Amendment with Examiner Cleary in the telephone conference on June 7. Examiner Cleary indicated that the clarification of the separate storage areas as hardware, firmware, stream data and command data areas would distinguish over the applied art. Applicants respectfully submit that claim 5, therefore, would not have been rendered obvious by the combination of the applied references.

Dependent claims 7, 8, 15, 18 and 21, though reciting separately patentable subject matter, include all of the features of independent claim 5 from which they depend. As such, in the same manner as independent claim 5 is not rendered obvious by the combination of the applied references, neither are claims 7, 8, 15, 18 and 21.

Accordingly, reconsideration and withdrawal of the rejection of claims 4, 5, 7, 8, 15, 18 and 21 as being unpatentable over the combination of the applied references are respectfully requested.

The Office Action, in paragraph 25, rejects claim 10 under 35 U.S.C. §103(a) as being unpatentable over Chou and Brock as applied to claim 9 above, and further in view of English Language Abstract of Japanese Patent No. 3-58101544 to Nishijima and U.S. Patent

No. 6,385,113 to Longwell et al. (hereinafter "Longwell"). This rejection is respectfully traversed.

Applicants respectfully submit that the combination of Nishijima, which teaches a memory area that is divided into a transmission area and a reception area, and Longwell, which teaches a means for storing a first and second starter address, and a first and second address range, does not overcome the shortfall in the application of Chou and Brock to independent claim 9 as discussed above. As such, claim 10, though reciting separately patentable subject matter, yet including all of the features of claim 9, would not have been rendered obvious over the combination of the applied references.

Accordingly, reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. §103(a) as being unpatentable over the combination of the applied references are respectfully requested.

Examiner Cleary telephoned Applicants' representative on June 7 and indicated that the proposed amendments to independent claims 1, 5 and 9 appeared to distinguish over the applied art and place the application in condition for allowance.

For at least these reasons, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 3-5, 7-10, 14-22, 25-27, 31 and 32 in addition to the allowed claims 23, 24 and 28-30, and the allowable subject matter of claims 11-13, are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this Application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number set forth below.

Respectfully submitted,



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